

**RHODE ISLAND DEPARTMENT OF HEALTH  
DIVISION OF DISEASE PREVENTION AND CONTROL  
OFFICE OF COMMUNICABLE DISEASES**



**WEST NILE VIRUS SURVEILLANCE FINAL REPORT  
2001 SEASON**

**JANUARY 7, 2002**

# WEST NILE VIRUS SURVEILLANCE DATA, 2001

## AVIAN SURVEILLANCE

### METHODS:

Dead bird sightings were reported by the public and selected groups by phone from mid-May through mid-October to Department of Environmental Management (Office of Mosquito Abatement Coordination). Birds meeting testing criteria (sick with neurological symptoms such as staggering or tilted head, or those that have been dead less than 48 hours and have no obvious signs of injury) were transported daily to the Rhode Island Department of Health (HEALTH) for daily necropsies. PCR assays were conducted at the HEALTH Laboratory.

### RESULTS:

Six species of birds tested positive for WNV in 2001, but crows remained the species most often reported, collected and tested for WNV testing. Of the 390 dead birds submitted for testing, 245 birds tested positive. Of the 245 birds infected with WNV in 2001, 204 (83.3%) were classified as *crow species*, 37 (15.1%) were blue jays, and four (1.6%) were other species (see Table 1).

**Table 1: Avian Surveillance by county, and species, 2001**

COUNTY	Number of crows reported	Number of crows tested	Number of positive crows	Number of "Other" birds reported	Number of "Other" birds tested	Number of positive "Other" birds
Bristol	14	12	<b>9</b>	9	9	<b>1 BJ</b>
Kent	37	37	<b>25</b>	15	15	<b>1 BJ</b>
Newport	41	38	<b>27</b>	18	17	<b>4 BJ</b>
Providence	42	40	<b>21</b>	38	36	<b>2 BJ; 1 F; 1 S</b>
Washington	137	134	<b>122</b>	53	52	<b>29 BJ; 1 CH; 1 MD</b>

Note: Abbreviations for "Other" birds: BJ (blue jay); F (finch); S (sparrow); CH (Black-capped chickadee); MD (mourning dove).

The Rhode Island WNV database received reports of dead birds from all 5 counties. Positive birds were reported from all counties: Bristol (10; 4.1%), Kent (31; 12.7 %), Newport (31; 12.7 %), Providence (25; 10.2 %) and Washington (153; 62.4%), refer to Figure 1. The first positive bird was reported on May 29, 2001 and the last positive bird was reported on October 18, 2001.

## **MOSQUITO SURVEILLANCE**

### METHODS:

From mid-May through mid-October fifty sites were trapped weekly with either CO<sub>2</sub>-baited CDC traps or gravid traps. Supplemental traps were set at selected locations where WNV-positive birds were found. Mosquito trapping was emphasized where "clusters" of WNV-positive birds were found. Up to 120 pools were assayed (via PCR and cell culture) weekly for WNV, EEE, and other selected viruses at the HEALTH Laboratory and/or at the Univ. of RI's lab.

### RESULTS:

Mosquitoes were collected on a weekly basis from mosquito traps placed at approximately 24 locations (Figure 1). Of the 1856 mosquito pools (representing 14,870 mosquitoes) submitted for testing, 14 pools tested positive for WNV (Figure 1). The breakdown of mosquito surveillance by county can be found in Table 2.

Table 2: Mosquito surveillance by county, 2001			
County	Number of mosquitoes collected	Number of mosquitoes tested	Number of positive mosquitoes pools
Bristol	178	178	0
Kent	978	978	0
Newport	4349	4349	6
Providence	1956	1953	7
Washington	7196	7188	1

Table 3: Mosquito surveillance by species, 2001			
Scientific Name	Number Collected	Number Tested	Number positive
<i>Aedes cinereus</i>	108	108	
<i>Aedes</i> sp. / <i>Ochlerotatus</i> sp.	2752	2752	
<b><i>Aedes vexans</i></b>	<b>1310</b>	<b>1310</b>	<b>1 pool-2 mosquitoes collected</b>
<i>Anopheles crucians</i>	9	9	
<b><i>Anopheles punctipennis</i></b>	<b>515</b>	<b>512</b>	<b>1 pool- 2 mosquitoes collected</b>
<b><i>Anopheles quadrimaculatus</i> s.l.</b>	<b>96</b>	<b>96</b>	<b>2 pools- 3 mosquitoes &amp; 1 mosquito</b>
<i>Anopheles</i> sp.	9	9	
<i>Anopheles walkeri</i>	22	22	
<b><i>Coquillettia perturbans</i></b>	<b>3022</b>	<b>3022</b>	<b>2 pools- 3 mosquitoes, 2 mosquitoes</b>
<i>Culex pipiens</i>	1	1	
<i>Culex restuans</i>	3	3	
<b><i>Culex</i> sp.</b>	<b>1381</b>	<b>1377</b>	<b>3 pools-3 mosquitoes, 1 mosquito, 5 mosquitoes</b>
<i>Culiseta impatiens</i>	3	3	
<i>Culiseta melanura</i>	1	1	
<i>Culiseta morsitans</i>	14	14	
<b><i>Culiseta</i> sp.</b>	<b>2431</b>	<b>3430</b>	<b>1 pool- 3 mosquitoes collected</b>
<i>Ochlerotatus abserratus</i>	108	108	
<i>Ochlerotatus atropalpus</i>	2	2	
<i>Ochlerotatus aurifer</i>	33	31	
<b><i>Ochlerotatus canadensis canadensis</i></b>	<b>572</b>	<b>572</b>	<b>2 pools- 3 mosquitoes &amp; 1 mosquito</b>
<b><i>Ochlerotatus cantator</i></b>	<b>464</b>	<b>464</b>	<b>1 pool- 2 mosquitoes collected</b>
<i>Ochlerotatus excrucians</i>	82	82	
<i>Ochlerotatus intrudens</i>	191	191	
<i>Ochlerotatus japonicus japonicus</i>	42	41	
<i>Ochlerotatus provocans</i>	2	2	
<i>Ochlerotatus punctor</i>	29	29	
<i>Ochlerotatus sollicitans</i>	178	178	
<i>Ochlerotatus sticticus</i>	16	16	
<i>Ochlerotatus stimulans</i>	11	11	
<i>Ochlerotatus taeniorhynchus</i>	972	972	
<i>Ochlerotatus triseriatus</i>	105	105	
<i>Ochlerotatus trivittatus</i>	69	69	
<b><i>Orthopodomyia signifera</i></b>	<b>1</b>	<b>1</b>	<b>1 pool-1 mosquito collected</b>
<i>Psorophora ferox</i>	58	58	
<i>Uranotaenia sapphirina</i>	45	45	

## **HUMAN SURVEILLANCE**

### **METHODS:**

The Rhode Island Department of Health received reports of aseptic meningitis and encephalitis from physicians. Surveillance and case management of specimens to the HEALTH Laboratory was conducted on suspect cases from June 1- October 15, 2001. For specimens to be tested, cases had to meet the following clinical case definitions: viral encephalitis (any age), or aseptic or suspect viral meningitis over the age of 17 years, or Guillain- Barré syndrome. The HEALTH Laboratory performed the IgM and IgG capture ELISA tests for WNV on suspected human cases.

### **Results:**

<b>Final data on suspect WNV case investigations (41)</b>	
17	Case investigations completed
22	Lost to follow-up/refused (no convalescent titer done)
2	Out of state resident
0	Convalescent serology pending

<b>Final data on viral encephalitis case investigations (2)</b>	
2	Case investigation completed
0	Lost to follow-up/refused
0	Out of state resident
0	Case investigation pending

In 2001, all human specimens tested for WNV were negative.

## **EQUINE SURVEILLANCE**

The HEALTH Laboratory tested two horses for serological evidence of WNV infection.

Both horses tested negative.

**FIGURE 1: WEST NILE VIRUS SURVEILLANCE,  
POSITIVE BIRD AND MOSQUITO FINDINGS  
RHODE ISLAND, 2000-2001**

